

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number
WO 2005/011105 A2

(51) International Patent Classification⁷: **H03F**

(21) International Application Number:
PCT/US2004/024020

(22) International Filing Date: 26 July 2004 (26.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/489,664 24 July 2003 (24.07.2003) US

(71) Applicant (for all designated States except US):
DOBBS-STANFORD CORPORATION [US/US];
2715 Electronic Lane, Dallas, TX 75220 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **CHRISTIAN, Kevin**
[US/US]; Ballard Technology, 3229A Pine Street, Everett,
WA 98201 (US).

(74) Agents: **FISCHER, John, G. et al.**; Hemingway, LLP,
8117 Preston Road, Suite 460, Dallas, TX 75225 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

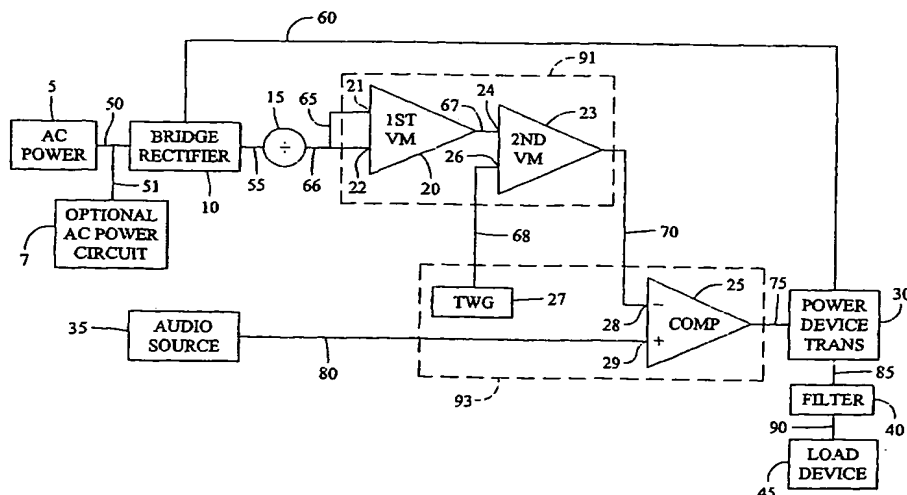
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MODULATED TRIANGULAR WAVE AMPLIFIER



(57) Abstract: The invention is a power amplifier circuit for providing a signal acceptable for use in audio amplifiers or similar applications without requiring a stable power supply free from fluctuation. An alternating current power supply signal rectified to a direct current signal is processed by two voltage multipliers. A voltage divider establishes a unity gain level, and the variance from this voltage is squared by the first voltage multiplier. This squared voltage is then multiplied with a triangular wave signal to generate a modulated triangular wave signal. The modulated triangular wave signal and a signal to be amplified, typically an audio signal, are processed by an internal comparator to generate a pulse width modulated signal. This modulated signal is processed by a power transistor network and filter to provide an amplified signal to a load device. By modulating the triangle wave signal to compensate for fluctuations in the power supply to the amplifier circuit, noise or ripples present in the power supply are demodulated, eliminating the requirement for a regulated power supply.

WO 2005/011105 A2